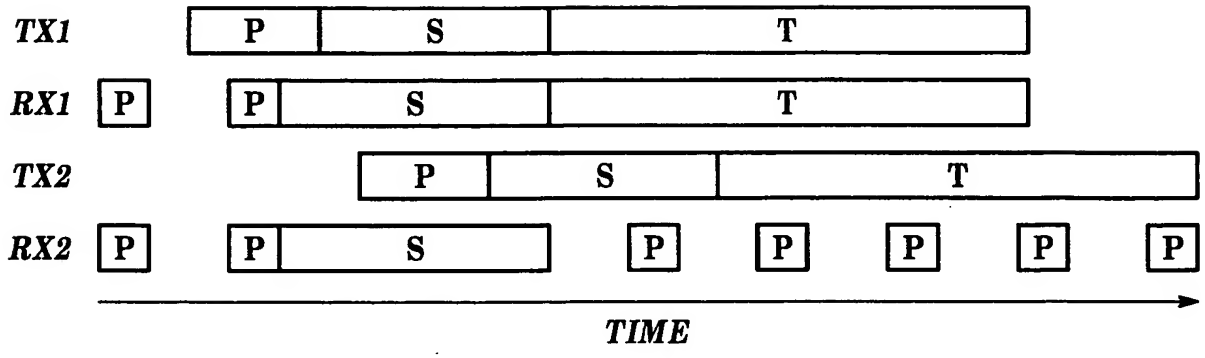

- PRIOR ART - FIG. 1

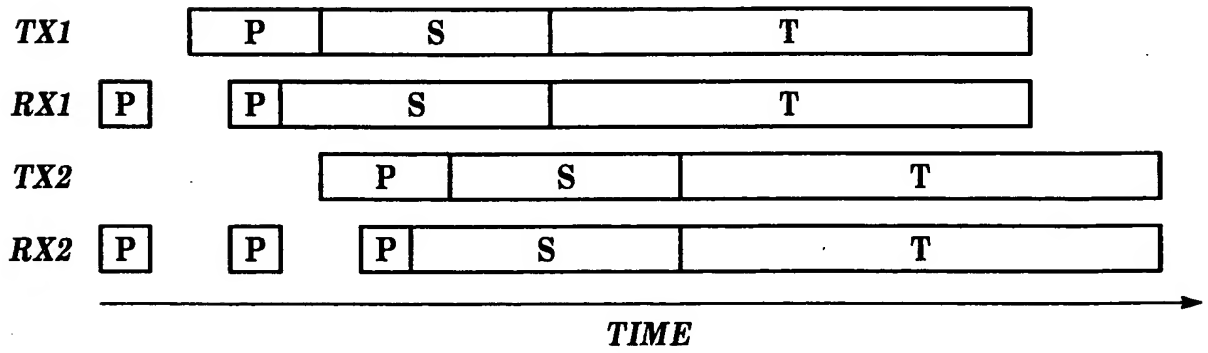

FIG. 2

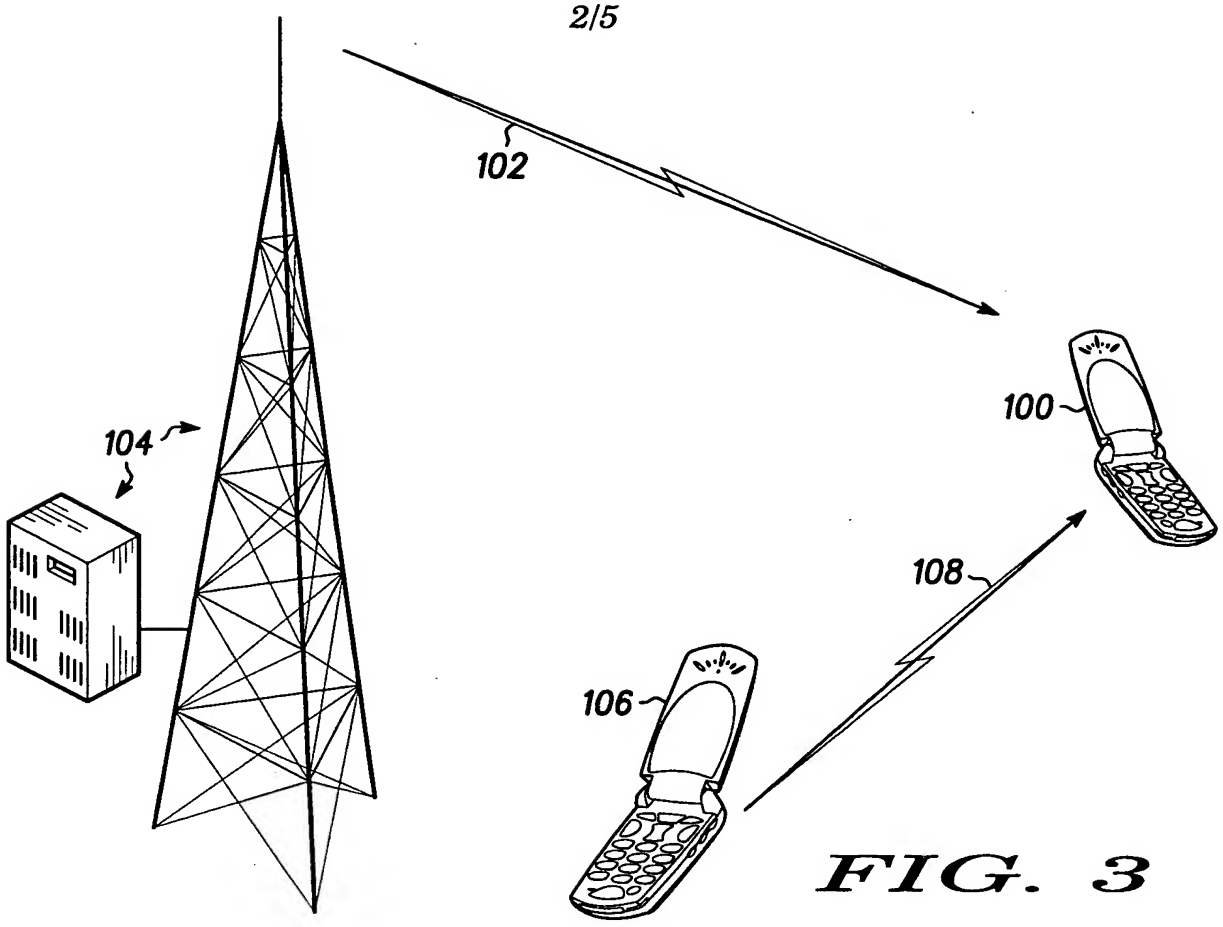
102
104
100
108
106

FIG. 3

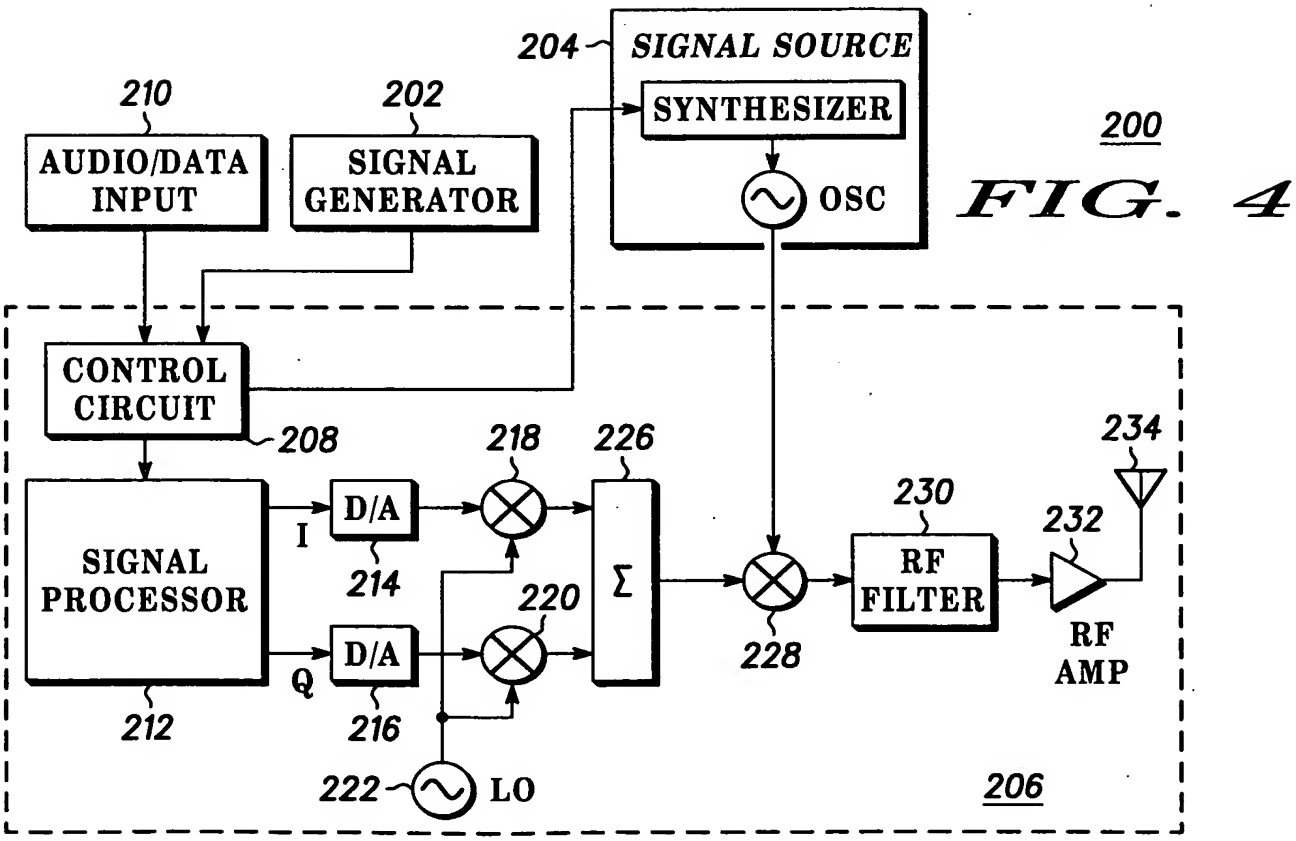
204
SIGNAL SOURCE
SYNTHESIZER
OSC
200
210
AUDIO/DATA INPUT
202
SIGNAL GENERATOR
CONTROL CIRCUIT
208
SIGNAL PROCESSOR
212
D/A
I
214
D/A
Q
216
218
220
222
LO
226
Σ
228
230
RF FILTER
232
RF AMP
234
206

FIG. 4

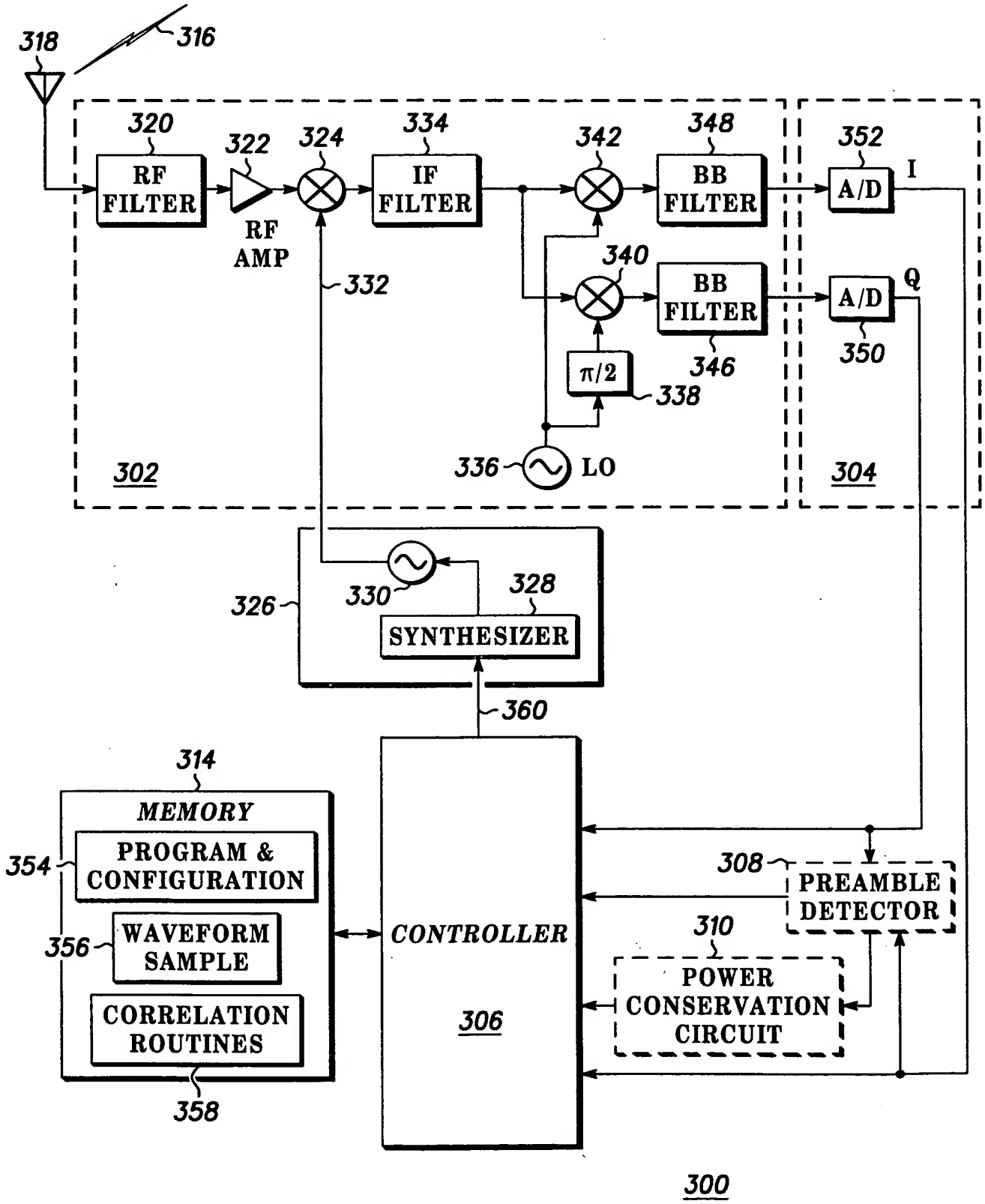
318
316
320
RF FILTER
322
RF AMP
324
334
IF FILTER
342
348
BB FILTER
352
A/D
I
340
BB FILTER
A/D
Q
350
346
π/2
338
332
336
LO
302
304
326
330
328
SYNTHESIZER
360
314
MEMORY
354
PROGRAM & CONFIGURATION
356
WAVEFORM SAMPLE
CORRELATION ROUTINES
358
CONTROLLER
306
308
PREAMBLE DETECTOR
310
POWER CONSERVATION CIRCUIT
300

FIG. 5

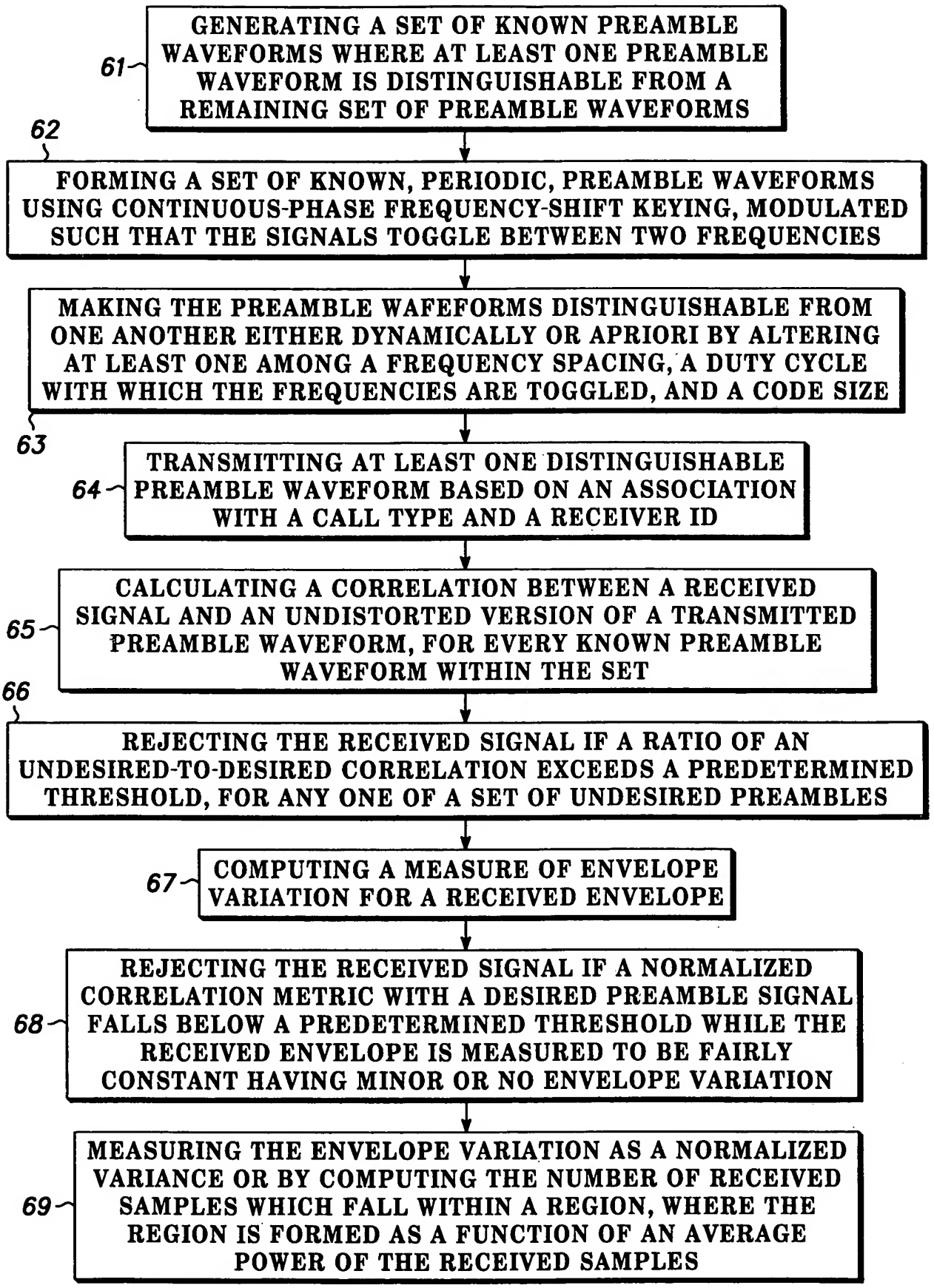
GENERATING A SET OF KNOWN PREAMBLE WAVEFORMS WHERE AT LEAST ONE PREAMBLE WAVEFORM IS DISTINGUISHABLE FROM A REMAINING SET OF PREAMBLE WAVEFORMS
61
62
FORMING A SET OF KNOWN, PERIODIC, PREAMBLE WAVEFORMS USING CONTINUOUS-PHASE FREQUENCY-SHIFT KEYING, MODULATED SUCH THAT THE SIGNALS TOGGLE BETWEEN TWO FREQUENCIES
MAKING THE PREAMBLE WAFEFORMS DISTINGUISHABLE FROM ONE ANOTHER EITHER DYNAMICALLY OR APRIORI BY ALTERING AT LEAST ONE AMONG A FREQUENCY SPACING, A DUTY CYCLE WITH WHICH THE FREQUENCIES ARE TOGGLED, AND A CODE SIZE
63
TRANSMITTING AT LEAST ONE DISTINGUISHABLE PREAMBLE WAVEFORM BASED ON AN ASSOCIATION WITH A CALL TYPE AND A RECEIVER ID
64
CALCULATING A CORRELATION BETWEEN A RECEIVED SIGNAL AND AN UNDISTORTED VERSION OF A TRANSMITTED PREAMBLE WAVEFORM, FOR EVERY KNOWN PREAMBLE WAVEFORM WITHIN THE SET
65
66
REJECTING THE RECEIVED SIGNAL IF A RATIO OF AN UNDESIRED-TO-DESIRED CORRELATION EXCEEDS A PREDETERMINED THRESHOLD, FOR ANY ONE OF A SET OF UNDESIRED PREAMBLES
COMPUTING A MEASURE OF ENVELOPE VARIATION FOR A RECEIVED ENVELOPE
67
REJECTING THE RECEIVED SIGNAL IF A NORMALIZED CORRELATION METRIC WITH A DESIRED PREAMBLE SIGNAL FALLS BELOW A PREDETERMINED THRESHOLD WHILE THE RECEIVED ENVELOPE IS MEASURED TO BE FAIRLY CONSTANT HAVING MINOR OR NO ENVELOPE VARIATION
68
MEASURING THE ENVELOPE VARIATION AS A NORMALIZED VARIANCE OR BY COMPUTING THE NUMBER OF RECEIVED SAMPLES WHICH FALL WITHIN A REGION, WHERE THE REGION IS FORMED AS A FUNCTION OF AN AVERAGE POWER OF THE RECEIVED SAMPLES
69

FIG. 6 60

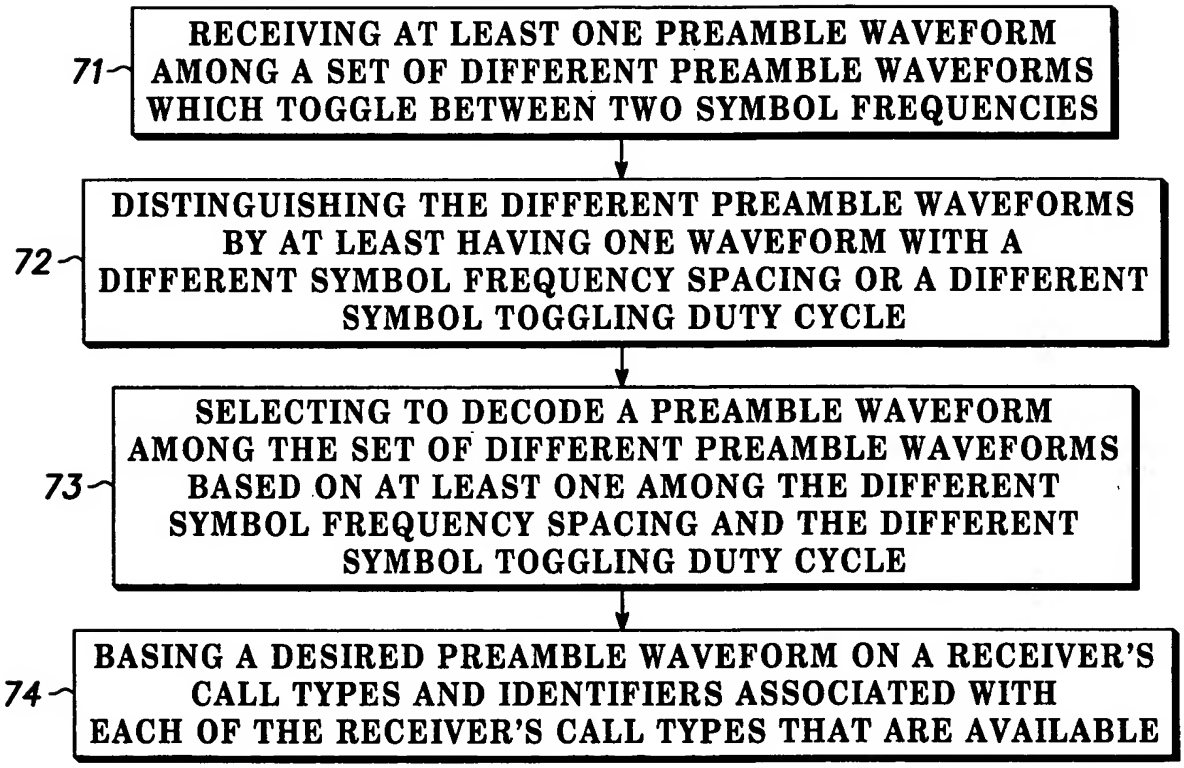
71
RECEIVING AT LEAST ONE PREAMBLE WAVEFORM AMONG A SET OF DIFFERENT PREAMBLE WAVEFORMS WHICH TOGGLE BETWEEN TWO SYMBOL FREQUENCIES
72
DISTINGUISHING THE DIFFERENT PREAMBLE WAVEFORMS BY AT LEAST HAVING ONE WAVEFORM WITH A DIFFERENT SYMBOL FREQUENCY SPACING OR A DIFFERENT SYMBOL TOGGLING DUTY CYCLE
73
SELECTING TO DECODE A PREAMBLE WAVEFORM AMONG THE SET OF DIFFERENT PREAMBLE WAVEFORMS BASED ON AT LEAST ONE AMONG THE DIFFERENT SYMBOL FREQUENCY SPACING AND THE DIFFERENT SYMBOL TOGGLING DUTY CYCLE
74
BASING A DESIRED PREAMBLE WAVEFORM ON A RECEIVER'S CALL TYPES AND IDENTIFIERS ASSOCIATED WITH EACH OF THE RECEIVER'S CALL TYPES THAT ARE AVAILABLE

FIG. 7 70